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**Annual GW Mon.
REPORTS**

**DATE:
2005**

ARCADIS

Sharon E. Hall

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Site Evaluation Department Manager

Blinebry-Drinkard K-27-North
Junction Box Site
2005 Annual Report
RICE Operating Company
Hobbs, New Mexico

Prepared for:
RICE Operating Company

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1. Introduction

The subject site is a former pipeline connection point on the Eunice Monument Eumont (EME) Saltwater Disposal System. The abandoned pipeline transported produced water from oil and gas leases to a permitted well for disposal by subsurface injection. The site is located in northeast Eunice, New Mexico approximately 0.1 mile north of the intersection of 9th Street and Avenue Q (Section 27, T21S-R37E, Lea County) (Figure 1).

Laboratory analytical reports for this 2005 Annual Report are summarized historically for soil and groundwater in tables 1 and 2, respectively. This Annual Report details the investigation activities and results and includes recommendations for further action for closure of the site.

2. Site History

The junction box was removed from the subject site. Following removal of the junction box, soil was excavated from the site. The excavation measured 30 feet long by 30 feet wide and 12 feet deep. During excavation activities, a 24-inch corroded steel gas line was encountered to the north and east of the junction box excavation. A subsurface drip collection vessel was found under the gas line northwest of the junction box. The drip collection vessel was removed by the gas transportation company soon after it was encountered.

Soils from the sidewalls and bottom of the excavation were sampled and analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), gasoline range organics (GRO), diesel range organics (DRO) and chlorides. Additionally, soil samples were field tested for total petroleum hydrocarbons (TPH) and chlorides. Laboratory and field analytical results are shown in Table 1. The sidewall sample consisted of a 4-point composite sample, and the bottom sample consisted of a 5-point composite sample.

A Junction Box Disclosure Report was completed for this site on July 25, 2003 and submitted to the New Mexico Oil Conservation Division (NMOCD) per the Rice Operating Company (ROC) Junction Box Upgrade Workplan. An Investigation Workplan was submitted to the NMOCD on April 1, 2004 and approved on November 18, 2004. The proposed activities from the Investigation Workplan were as follows:

- A one-half mile water well inventory will be performed. The water well inventory will include a review of water well records listed on the New

Mexico State Engineer Office and United States Geological Survey (USGS) websites and windmills indicated on applicable USGS topographic maps.

- One soil boring will be installed at the subject site at the former junction box location. Soil samples will be collected at regular intervals no greater than five feet, screened in the field using a photo-ionization detector (PID) and field tested for chlorides. Soil lithology and the presence of any observed staining or odor will be recorded. One sample, the sample collected at total depth of the boring, will be submitted to a laboratory for laboratory analysis as confirmation of the field sampling.
- If impacts to soil are identified in soil samples collected from the interval at which groundwater is encountered, the soil boring will be converted to a monitor well. The monitor well will be constructed, developed and sampled in accordance with United States Environmental Protection Agency (USEPA) and NMOCD standards. A groundwater sample will be collected and submitted for laboratory analysis for chlorides, BTEX and general chemistry.
- A report that details the investigation activities and results will be submitted to the NMOCD. The report will include recommendations for further action if necessary or for closure of the site.

3. Geology and Hydrogeology

The Ogallala Formation is the principal source of groundwater in the subject area. Depth to groundwater in Lea County ranges from approximately 12 to approximately 300 feet below ground surface (ft bgs). The Ogallala consists of predominantly coarse fluvial conglomerate and sandstone and fine-grained Eolian siltstone and clay. Where present in the subject area, the Ogallala unconformably overlies Triassic redbeds. The regional groundwater gradient is to the east/southeast.

Depth to groundwater at the subject site is approximately 43 ft bgs. Groundwater elevations measured in monitor well MW-1 at the subject site are shown in Table 2.

4. Investigation Field Activities

A field survey to identify any water wells in the area in addition to a one-half mile water well inventory was conducted. The water well locations are shown on Figure 1.

A water well survey and Physical Setting survey was prepared by Environmental Data Resources Inc. (EDR). The report is included as Appendix A. Two water wells were identified within one-half mile of the site. No public water supplies were identified within one-half mile. One of the water wells is upgradient of the site based on regional gradient. The other water well may be downgradient of the site based on regional gradient.

In accordance with the NMOCD-approved ICP, a soil boring was constructed on June 9, 2005. Based on the identification of impacts to soil in soil samples collected from the interval at which groundwater was encountered, the soil boring was converted to a monitor well. The location of MW-1 is shown on Figure 2. MW-1 was constructed, developed and sampled in accordance with USEPA and NMOCD standards.

MW-1 was drilled to a total depth of 50 ft bgs and was completed with 4-inch casing to 49 ft bgs. During the installation of MW-1, soil samples were collected at five-foot intervals, screened in the field using a PID and field tested for chlorides. The PID readings for MW-1 ranged from 0.3 to 5.0 mg/kg and the chloride field tests ranged from 221 to 3,236 milligrams per kilogram (mg/kg). One sample collected from 40 to 40.5 ft bgs was submitted to a laboratory for analysis as confirmation of the field sampling. The chloride concentration of the laboratory-analyzed sample result (486 mg/kg) is comparable to the field testing result (476 mg/kg) at the same 40 to 40.5 ft bgs interval. Results of the laboratory soil sampling and field screening/testing are included in Table 1.

4.1 Soil Excavation

Junction box excavation activities were performed at the site between May 19 and June 3, 2003. Soil samples were collected to determine extent of impacted soils and basis for removal. Chloride and TPH field tests were conducted as the area was excavated. TPH concentrations and chloride impact remained relatively consistent throughout the excavation activities. Confirmation laboratory sample results and field readings are shown in Table 1. Soil in this area was excavated at 30 feet x 30 feet to a depth of 12 ft bgs. The area of excavation is shown on Figure 2.

Based on the results of the soil sampling analytical results, elevated chloride and hydrocarbon concentrations are present at the subject site. Field TPH results indicate that the highest concentration of TPH was detected in the sample collected from beneath the drip collection vessel. The excavation was backfilled with excavated soil to a depth 4 ft bgs, and a 20-mil poly liner was installed above the backfilled,

excavated soil. From 4 ft bgs to surface, clean imported soil was backfilled above the liner and the site was graded and seeded with native vegetation.

4.2 Sampling of Monitor Well

A groundwater sample was collected from MW-1 on June 27, 2005 and submitted for laboratory analysis for BTEX, chlorides and general chemistry using USEPA Methods 8021B, 310.2M, 300.0, 160.1 and 6010B. Subsequent groundwater samples were collected from MW-1 on September 6 and October 17, 2005 and submitted for laboratory analysis for BTEX, chlorides and general chemistry using USEPA Methods 8021B, 300.0 and 160.1. Depth to water was measured from top of casing. Results of the laboratory groundwater sampling and depth to water are included in Table 2.

Naturally-occurring inorganic analytes (chlorides, total dissolved solids [TDS], sulfate, calcium, magnesium, potassium and sodium) were detected in groundwater samples collected from MW-1.

Chloride concentrations in groundwater were detected above the New Mexico standard of 250 milligrams per liter (mg/L) in MW-1 for all 2005 sampling events. Chloride concentrations for MW-1 were 1,060, 810 and 978 mg/L on June 27, September 6 and October 17, 2005, respectively.

TDS concentrations in groundwater were detected above the Water Quality Control Commission (WQCC) standard of 1,000 mg/L in MW-1 for all 2005 sampling events. TDS concentrations for MW-1 were 2,760, 2,270 and 2,240 mg/L on June 27, September 6 and October 17, 2005, respectively.

Sulfate concentrations in groundwater were detected below the WQCC standard of 600 mg/L in MW-1 for all 2005 sampling events. Sulfate concentrations for MW-1 were 422, 290 and 357 mg/L on June 27, September 6 and October 17, 2005, respectively.

Calcium, magnesium, potassium and sodium were detected in a groundwater sample collected from MW-1 on June 27, 2005 at concentrations of 229, 109, 13.3 and 494 mg/L, respectively.

BTEX was not detected in MW-1 during the June 27 and September 6, 2005 groundwater sampling events. Total xylenes was detected in a groundwater sample collected from MW-1 on October 17, 2005 at a concentration of 0.000886 J mg/L,

which was an estimated value below the laboratory reporting limit. No other analyzed volatile organic compounds were detected.

5. Conclusions and Recommendations

Soils in the immediate area have been excavated and a clay liner installed as described in this report. Backfill material (blended soils) concentrations did not exceed BTEX and benzene concentrations of 50 mg/kg and 10 mg/kg, respectively. The site has been graded to prevent ponding of rainwater and seeded with a blend of native vegetation.

The groundwater samples were analyzed for hydrocarbons (BTEX) and general water quality. Total xylenes was detected in groundwater collected from MW-1 during the 2005 sampling events at a concentration below laboratory reporting limits. Chloride and TDS were detected at concentrations in excess of WQCC standards in MW-1. Based on the sample results, the recommended sampling frequency is quarterly. Groundwater sampling will be discontinued when a total of eight quarters of sample results indicate that chloride concentrations are below WQCC Title 20, Chapter 6, Part 2 standards.

Because analytical results indicate that chloride concentrations exceed New Mexico WQCC standards, installation of additional monitoring wells may be warranted. Quarterly sampling of MW-1 will continue in 2006.

6. References

Groundwater Handbook, United States Environmental Protection Agency, Office of Research and Development, Center for Environmental Research Information; 1992.

Hydrology and Hydrochemistry of the Ogallala Aquifer, Southern High Plains, Texas Panhandle and Eastern New Mexico; Report Number 177; Bureau of Economic Geology; 1988.

Hydrogeochemistry and Water Resources of the Lower Dockum Group in the Texas Panhandle and Eastern New Mexico; Report Number 161; Bureau of Economic Geology; 1986.

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**Blinebry-Drinkard K-27-North
Junction Box Site
2005 Annual Report**

RICE Operating Company
Hobbs, New Mexico

New Mexico Water Quality Control Commission, Title 20 Chapter 6, Part 2,
Subpart I.

Junction K-27-North, Junction Box Disclosure Report; RICE Operating Company;
July 25, 2003.

Junction K-27-North, Investigation Plan; ARCADIS G&M, Inc.; April 1, 2004.

BD Jct. K-27-North

Unit 'K', Section 27, T21S, R37E

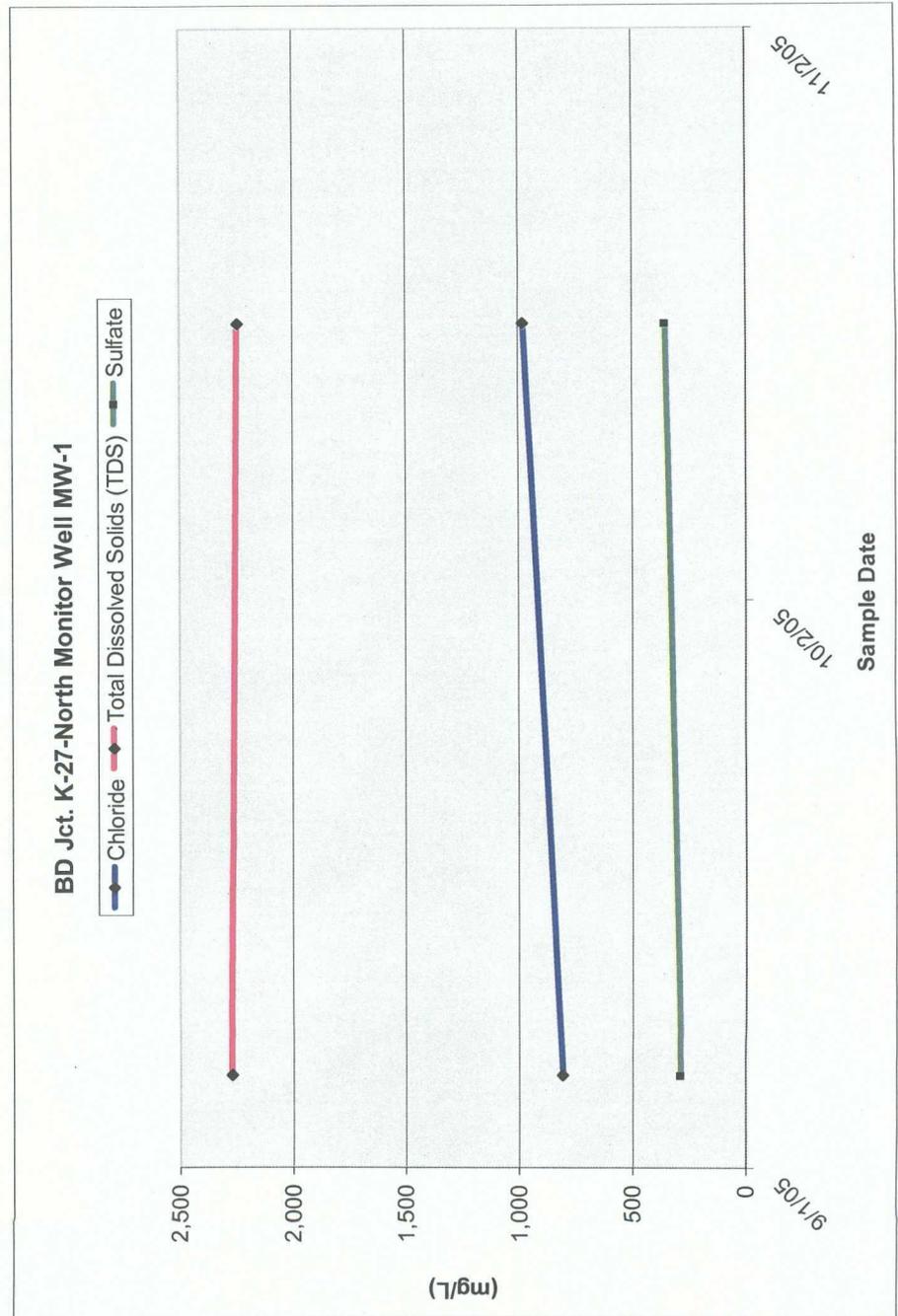
4-inch well installed 5/10/05

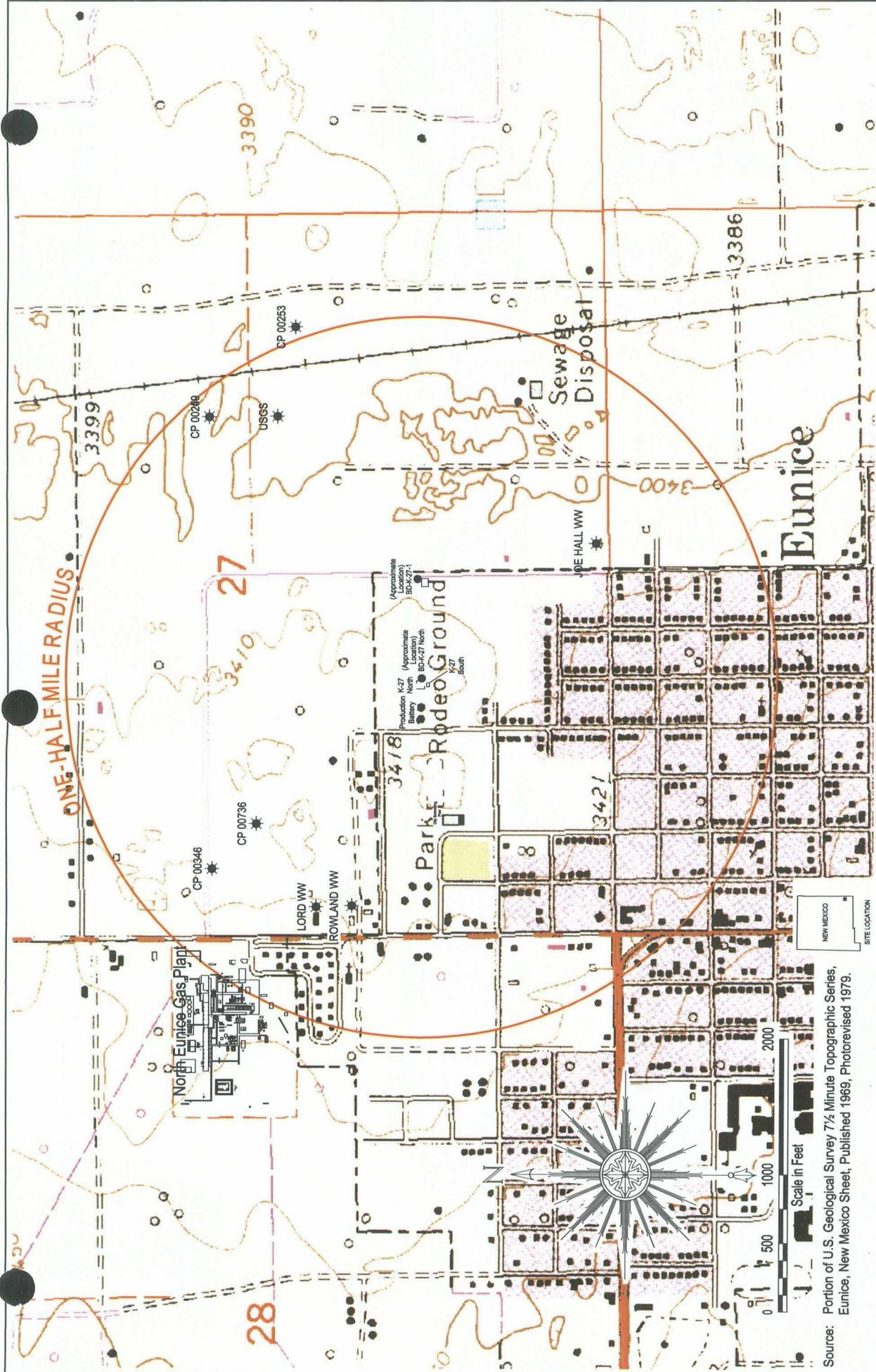
Table 2
Groundwater Results
Bliebry-Drinkard K-27-North Junction Box Site, RICE Operating Company, Eunice, New Mexico

All concentrations are in mg/L

Well Name	Depth to Water * (ft)	Total Depth	Sample Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	Cl ⁻	TDS	Sulfate	Total Alkalinity	Calcium	Magnesium	Potassium	Sodium	Comments
MW-1	43.50	52.50	6/27/05	<0.001	<0.001	<0.001	<0.001	1,060	2,760	422	260	229	109	13.3	494	turbid
	43.31	52.50	9/6/05	<0.001	<0.001	<0.001	<0.001	810	2,270	290	NA	NA	NA	NA	NA	
	43.21	52.50	10/17/05	<0.001	<0.001	<0.001	1{0.000886}	978	2,240	357	NA	NA	NA	NA	NA	

* Depth to water measured from top of casing.





Source: Portion of U.S. Geological Survey 7 1/2 Minute Topographic Series, Eunice, New Mexico Sheet, Published 1969, Photorevised 1979.



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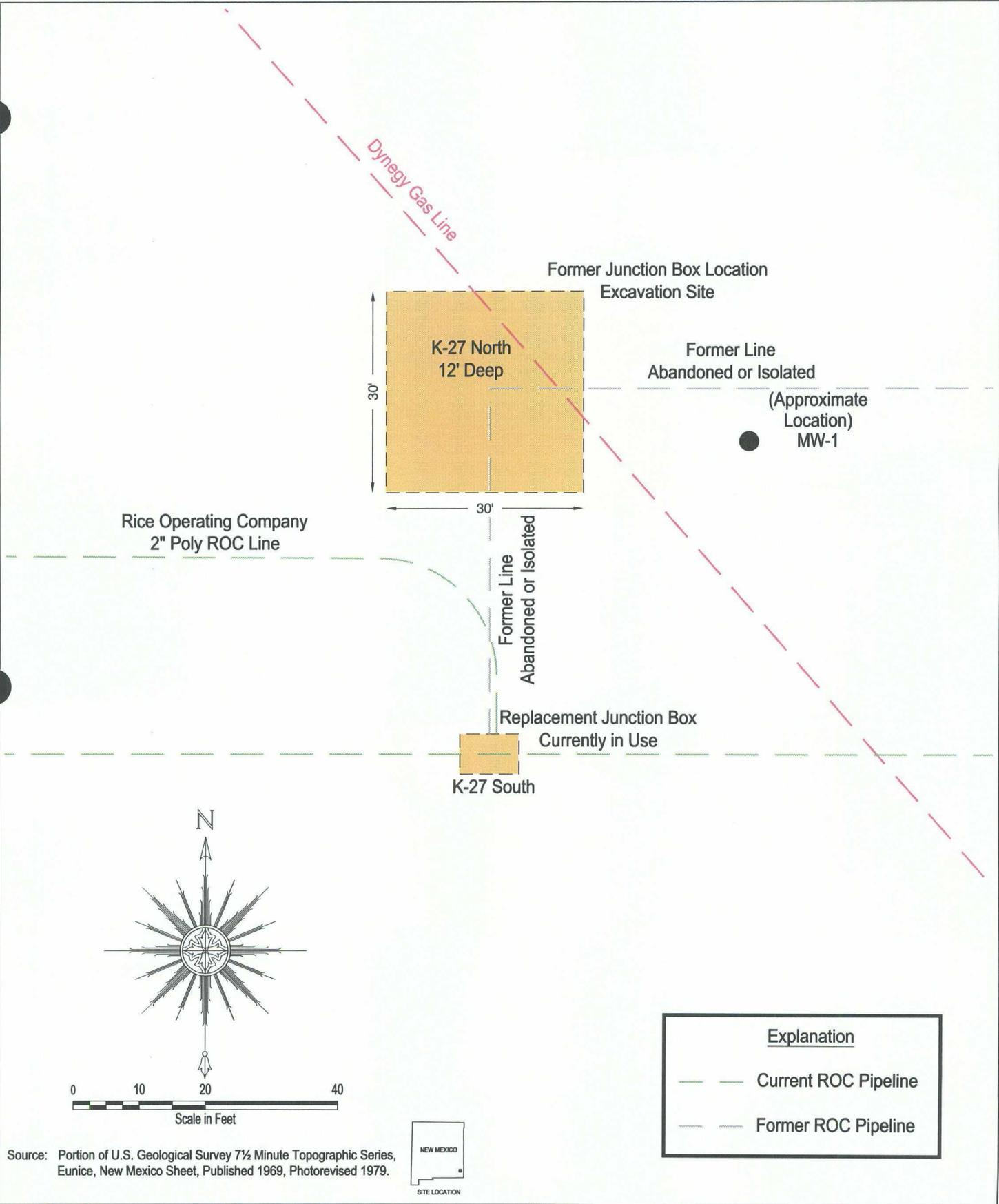
Area Manager
A. Schmidt
Project Manager
S. Hall
Task Manager
K. Lowrie
Technical Review
K. Lowrie

Rice Operating Company
Blinberry-Drinkard K-27-North Junction Box Site

Site Location Map

Lea County, New Mexico

Project Number	MT000834.0001
Drawing Date	15 February 2006
Figure	1



Source: Portion of U.S. Geological Survey 7½ Minute Topographic Series, Eunice, New Mexico Sheet, Published 1969, Photorevised 1979.



Area Manager	A. Schmidt
Project Manager	S. Hall
Task Manager	K. Lowrie
Technical Review	K. Lowrie



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**Extent and Depth of Excavation
and Monitor Well Location**

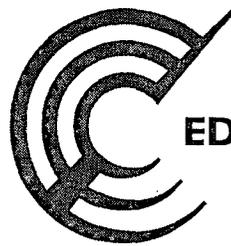
Lea County, New Mexico

Project Number	MT000834.0001
Drawing Date	15 February 2006
Figure	2

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Appendix A

Water Well Survey



EDR® Environmental
Data Resources Inc

The EDR GeoCheck[®] Report

**Rice Operating Junction Box
Avenue Q
Eunice, NM 88231**

Inquiry Number: 1613105.1s

February 13, 2006

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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GEOCHECK® - PHYSICAL SETTING SOURCE REPORT

TARGET PROPERTY ADDRESS

RICE OPERATING JUNCTION BOX
AVENUE Q
EUNICE, NM 88231

TARGET PROPERTY COORDINATES

Latitude (North):	32.44650 - 32° 26' 47.4"
Longitude (West):	103.1522 - 103° 9' 7.9"
Universal Transverse Mercator:	Zone 13
UTM X (Meters):	673700.1
UTM Y (Meters):	3591242.5
Elevation:	3413 ft. above sea level

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

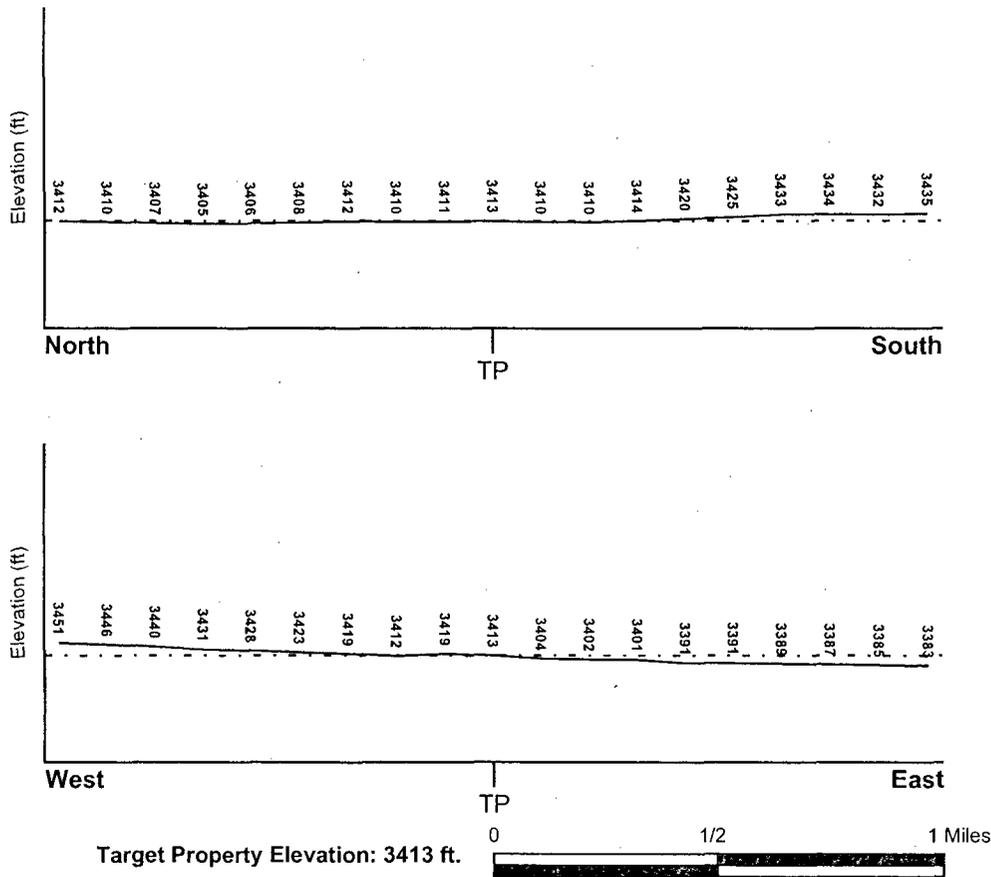
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

USGS Topographic Map: 32103-D2 EUNICE, NM
 General Topographic Gradient: General East
 Source: USGS 7.5 min quad index

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

<u>Target Property County</u> LEA, NM	<u>FEMA Flood Electronic Data</u> Not Available
Flood Plain Panel at Target Property:	Not Reported
Additional Panels in search area:	Not Reported

NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u> EUNICE	<u>NWI Electronic Data Coverage</u> Not Available
--	--

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data:*

Search Radius: 1.25 miles
Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

GEOLOGIC AGE IDENTIFICATION

Era:	Cenozoic	Category:	Continental Deposits
System:	Tertiary		
Series:	Pliocene		
Code:	Tpc (decoded above as Era, System & Series)		

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	BERINO
Soil Surface Texture:	loamy fine sand
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.
Hydric Status:	Soil does not meet the requirements for a hydric soil.
Corrosion Potential - Uncoated Steel:	HIGH
Depth to Bedrock Min:	> 60 inches
Depth to Bedrock Max:	> 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Permeability Rate (in/hr)	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	8 inches	loamy fine sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 7.80 Min: 6.60
2	8 inches	60 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 2.00 Min: 0.60	Max: 8.40 Min: 7.40
3	60 inches	70 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 2.00 Min: 0.60	Max: 9.00 Min: 7.90
4	70 inches	75 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 8.40 Min: 7.90

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: fine sandy loam
fine sand
gravelly - loam

Surficial Soil Types: fine sandy loam
fine sand
gravelly - loam

Shallow Soil Types: fine sandy loam

Deeper Soil Types: indurated
gravelly - loamy fine sand
clay loam
loamy fine sand
very gravelly - loam
fine sand
sandy loam

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	1.000
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	USGS2932999	1/4 - 1/2 Mile ENE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
7	NM3599313	1/2 - 1 Mile SSW

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
2	NM1000000007246	1/4 - 1/2 Mile NW
3	NM1000000006959	1/2 - 1 Mile NW
4	NM1000000007245	1/2 - 1 Mile West
5	NM1000000007060	1/2 - 1 Mile SW
6	NM1000000007236	1/2 - 1 Mile WNW
8	NM1000000007325	1/2 - 1 Mile NNE
9	NM1000000007292	1/2 - 1 Mile South
10	NM1000000007259	1/2 - 1 Mile West

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

<u>DISTANCE FROM TP (Miles)</u>	<u>DISTANCE FROM TP (Miles)</u>
1/2 - 1 Mile NNW	1/2 - 1 Mile North
1/2 - 1 Mile North	1/2 - 1 Mile North
1/2 - 1 Mile North	1/2 - 1 Mile NNE
1/2 - 1 Mile NNE	1/2 - 1 Mile NNE
1/2 - 1 Mile NNE	1/2 - 1 Mile North
1/2 - 1 Mile North	1/2 - 1 Mile North
1/2 - 1 Mile North	1/2 - 1 Mile North

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE OIL/GAS WELL INFORMATION

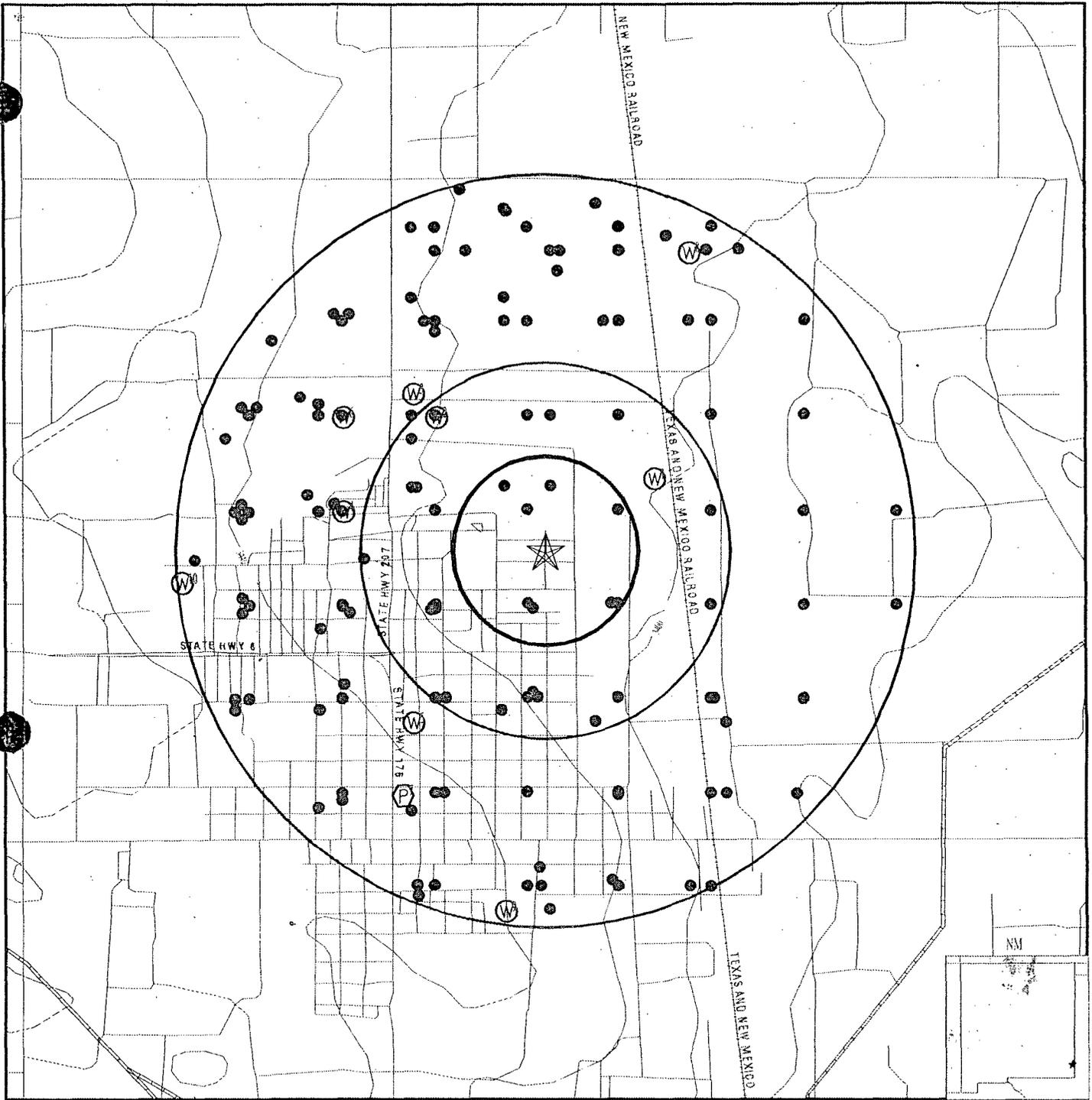
DISTANCE
FROM TP (Miles)

1/2 - 1 Mile WSW
 1/2 - 1 Mile WSW
 1/4 - 1/2 Mile South
 1/4 - 1/2 Mile SSE
 1/4 - 1/2 Mile SSE
 1/4 - 1/2 Mile SW
 1/4 - 1/2 Mile SW
 1/2 - 1 Mile SE
 1/2 - 1 Mile ESE
 1/2 - 1 Mile SW
 1/2 - 1 Mile WSW
 1/2 - 1 Mile WSW
 1/2 - 1 Mile WSW
 1/4 - 1/2 Mile SSW
 1/2 - 1 Mile WSW
 1/2 - 1 Mile SE
 1/2 - 1 Mile South
 1/2 - 1 Mile South
 1/2 - 1 Mile South
 1/2 - 1 Mile SSE
 1/2 - 1 Mile SSW
 1/2 - 1 Mile SSW
 1/2 - 1 Mile SSW
 1/2 - 1 Mile SE
 1/2 - 1 Mile SW
 1/2 - 1 Mile SSE
 1/2 - 1 Mile SW
 1/2 - 1 Mile SSW
 1/2 - 1 Mile SSE
 1/2 - 1 Mile SSW
 1/2 - 1 Mile SSW
 1/2 - 1 Mile SSW
 1/2 - 1 Mile South
 1/2 - 1 Mile SSE
 1/2 - 1 Mile SSW
 1/2 - 1 Mile South

DISTANCE
FROM TP (Miles)

1/2 - 1 Mile WSW
 1/4 - 1/2 Mile South
 1/4 - 1/2 Mile SSE
 1/4 - 1/2 Mile SW
 1/4 - 1/2 Mile SW
 1/4 - 1/2 Mile SW
 1/2 - 1 Mile SE
 1/2 - 1 Mile ESE
 1/2 - 1 Mile SW
 1/2 - 1 Mile SW
 1/2 - 1 Mile WSW
 1/2 - 1 Mile WSW
 1/2 - 1 Mile SW
 1/2 - 1 Mile SW
 1/2 - 1 Mile WSW
 1/4 - 1/2 Mile SSE
 1/2 - 1 Mile SE
 1/2 - 1 Mile South
 1/2 - 1 Mile South
 1/2 - 1 Mile SSE
 1/2 - 1 Mile SSE
 1/2 - 1 Mile SSW
 1/2 - 1 Mile SSW
 1/2 - 1 Mile SSW
 1/2 - 1 Mile SE
 1/2 - 1 Mile SW
 1/2 - 1 Mile SW
 1/2 - 1 Mile SSE
 1/2 - 1 Mile SW
 1/2 - 1 Mile South
 1/2 - 1 Mile SSW
 1/2 - 1 Mile SSW
 1/2 - 1 Mile SSW
 1/2 - 1 Mile South
 1/2 - 1 Mile South
 1/2 - 1 Mile South
 1/2 - 1 Mile SSE
 1/2 - 1 Mile SSW

PHYSICAL SETTING SOURCE MAP - 1613105.1s



- County Boundary
- Major Roads
- Contour Lines
- Oil & Gas pipelines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells



<p>SITE NAME: Rice Operating Junction Box ADDRESS: Avenue Q Eunice NM 88231 LAT/LONG: 32.4465 / 103.1522</p>	<p>CLIENT: ARCADIS Geraghty & Miller CONTACT: Kuohui Lowrie INQUIRY #: 1613105.1s DATE: February 13, 2006</p>
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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

1

ENE
1/4 - 1/2 Mile
Lower

FED USGS USGS2932999

Agency cd:	USGS	Site no:	322657103084801
Site name:	21S.37E.27.23222		
Latitude:	322657		
Longitude:	1030848	Dec lat:	32.44928717
Dec lon:	-103.14713557	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	35
State:	35	County:	025
Country:	US	Land net:	NESWNES27 T21S R37E
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	3396.70	Altitude method:	U
Altitude accuracy:	Not Reported	Altitude datum:	NGVD29
Hydrologic:	Landreth Monument Draws. New Mexico, Texas. Area = 4270 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	MST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM,BOLSON DEPOSITS AND OTHER SURFACE DEPOSITS		
Well depth:	101	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	463527100
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1965-11-16	Ground water data end date:	1996-02-08
Ground water data count:	8		

Ground-water levels, Number of Measurements: 8

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1996-02-08	49.81		1991-04-25	58.90	
1986-03-06	52.18		1981-03-02	55.91	
1976-01-20	60.29		1970-12-14	68.07	
1966-03-04	73.43		1965-11-16	74.82	

2

NW
1/4 - 1/2 Mile
Higher

NM WELLS NM100000007246

Objectid:	32060	Id:	108402
X coord:	673214	Y coord:	3591992
Db file nb:	CP 00736		
Use:	72-12-1 DOMESTIC, ONE HOUSEHOLD		
Diversion:	3	Pod rec nb:	108402
Well number:	CP 00736	Tws:	21S
Rng:	37E	Sec:	27
Q:	1	Q2:	3
Q3:	Not Reported	Zone:	Not Reported
X:	Not Reported	Y:	Not Reported
Easting:	673262	Northing:	3591790
Start date:	19880910	Finish dat:	19880910
Depth well:	120	Depth wate:	76

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

3
NW
1/2 - 1 Mile
Higher

NM WELLS NM100000006959

Objectid:	31774	Id:	108233
X coord:	673113	Y coord:	3592091
Db file nb:	CP 00346		
Use:	72-12-1 DOMESTIC ONE HOUSEHOLD		
Diversion:	0	Pod rec nb:	108233
Well numbe:	CP 00346 DCL	Tws:	21S
Rng:	37E	Sec:	27
Q:	1	Q2:	3
Q3:	1	Zone:	Not Reported
X:	Not Reported	Y:	Not Reported
Easting:	673161	Northing:	3591889
Start date:	0	Finish dat:	0
Depth well:	0	Depth wate:	0

4
West
1/2 - 1 Mile
Higher

NM WELLS NM100000007245

Objectid:	32059	Id:	108006
X coord:	672819	Y coord:	3591583
Db file nb:	CP 00735		
Use:	72-12-1 DOMESTIC ONE HOUSEHOLD		
Diversion:	3	Pod rec nb:	108006
Well numbe:	CP 00735	Tws:	21S
Rng:	37E	Sec:	28
Q:	4	Q2:	2
Q3:	Not Reported	Zone:	Not Reported
X:	Not Reported	Y:	Not Reported
Easting:	672867	Northing:	3591381
Start date:	19880726	Finish dat:	19880727
Depth well:	105	Depth wate:	0

5
SW
1/2 - 1 Mile
Higher

NM WELLS NM100000007060

Objectid:	31875	Id:	108163
X coord:	673134	Y coord:	3590685
Db file nb:	CP 00548		
Use:	72-12-1 DOMESTIC ONE HOUSEHOLD		
Diversion:	0	Pod rec nb:	108163
Well numbe:	CP 00548 EXP	Tws:	21S
Rng:	37E	Sec:	34
Q:	1	Q2:	1
Q3:	3	Zone:	Not Reported
X:	Not Reported	Y:	Not Reported
Easting:	673182	Northing:	3590483
Start date:	0	Finish dat:	0
Depth well:	0	Depth wate:	0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

6
WNW **NM WELLS** **NM1000000007236**
1/2 - 1 Mile
Higher

Objectid:	32050	Id:	108051
X coord:	672812	Y coord:	3591985
Db file nb:	CP 00711		
Use:	72-12-1 DOMESTIC ONE HOUSEHOLD		
Diversion:	3	Pod rec nb:	108051
Well numbe:	CP 00711	Tws:	21S
Rng:	37E	Sec:	28
Q:	2	Q2:	4
Q3:	Not Reported	Zone:	Not Reported
X:	Not Reported	Y:	Not Reported
Easting:	672860	Northing:	3591783
Start date:	19871001	Finish dat:	19871002
Depth well:	100	Depth wate:	65

7
SSW **FRDS PWS** **NM3599313**
1/2 - 1 Mile
Higher

PWS ID: NM3599313 PWS Status: Active
Date Initiated: 8710 Date Deactivated: Not Reported
PWS Name: TEXACO GAS PLANT #1
 PO BOX 1137
 EUNICE, NM 88231

Addressee / Facility: Not Reported

Facility Latitude: 32 26 13. Facility Longitude: 103 09 30
City Served: Not Reported
Treatment Class: Untreated Population: 00000050

PWS currently has or had major violation(s) or enforcement: Yes

Violations information not reported.

ENFORCEMENT INFORMATION:

System Name:	TEXACO SOUTH PLANT		
Violation Type:	MCL, Acute (TCR)		
Contaminant:	COLIFORM (TCR)		
Compliance Period:	1994-07-01 - 1994-07-31	Analytical Value:	00000000.00
Violation ID:	9400716	Enforcement ID:	9400950
Enforcement Date:	1994-07-22	Enf. Action:	State Violation/Reminder Notice
System Name:	TEXACO SOUTH PLANT		
Violation Type:	MCL, Acute (TCR)		
Contaminant:	COLIFORM (TCR)		
Compliance Period:	1994-07-01 - 1994-07-31	Analytical Value:	00000000.00
Violation ID:	9400716	Enforcement ID:	9400951
Enforcement Date:	1994-07-22	Enf. Action:	State Public Notif Requested

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

ENFORCEMENT INFORMATION:

System Name:	TEXACO SOUTH PLANT	Analytical Value:	00000000.00
Violation Type:	MCL, Acute (TCR)	Enforcement ID:	9400952
Contaminant:	COLIFORM (TCR)	Enf. Action:	State Public Notif Received
Compliance Period:	1994-07-01 - 1994-07-31		
Violation ID:	9400716		
Enforcement Date:	1994-08-11		
System Name:	TEXACO SOUTH PLANT	Analytical Value:	00000000.00
Violation Type:	Monitoring, Routine Major (TCR)	Enforcement ID:	9600277
Contaminant:	COLIFORM (TCR)	Enf. Action:	State Violation/Reminder Notice
Compliance Period:	1995-12-01 - 1995-12-31		
Violation ID:	9600038		
Enforcement Date:	1996-01-03		
System Name:	TEXACO SOUTH PLANT	Analytical Value:	00000000.00
Violation Type:	Monitoring, Routine Major (TCR)	Enforcement ID:	9600278
Contaminant:	COLIFORM (TCR)	Enf. Action:	State Public Notif Requested
Compliance Period:	1995-12-01 - 1995-12-31		
Violation ID:	9600038		
Enforcement Date:	1996-01-03		
System Name:	TEXACO SOUTH PLANT	Analytical Value:	00000000.00
Violation Type:	Monitoring, Routine Major (TCR)	Enforcement ID:	9600279
Contaminant:	COLIFORM (TCR)	Enf. Action:	State Public Notif Received
Compliance Period:	1995-12-01 - 1995-12-31		
Violation ID:	9600038		
Enforcement Date:	1996-01-11		

8
NNE
1/2 - 1 Mile
Lower

NM WELLS NM100000007325

Objectid:	32135	Id:	151196
X coord:	674304	Y coord:	3592717
Db file nb:	CP 00881		
Use:	72-12-1 DOMESTIC ONE HOUSEHOLD		
Diversion:	3	Pod rec nb:	151196
Well numbe:	CP 00881	Tws:	21S
Rng:	37E	Sec:	22
Q:	4	Q2:	4
Q3:	3	Zone:	Not Reported
X:	Not Reported	Y:	Not Reported
Easting:	674352	Northing:	3592515
Start date:	19990904	Finish dat:	19990907
Depth well:	95	Depth wate:	53

9
South
1/2 - 1 Mile.
Higher

NM WELLS NM100000007292

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Objectid:	32106	Id:	108038
X coord:	673550	Y coord:	3589888
Db file nb:	CP 00835		
Use:	72-12-1 LIVESTOCK WATERING		
Diversion:	3	Pod rec nb:	108038
Well numbe:	CP 00835	Tws:	21S
Rng:	37E	Sec:	34
Q:	3	Q2:	2
Q3:	3	Zone:	Not Reported
X:	Not Reported	Y:	Not Reported
Easting:	673598	Northing:	3589686
Start date:	19940221	Finish dat:	19940225
Depth well:	145	Depth wate:	0

10
West
1/2 - 1 Mile
Higher

NM WELLS NM100000007259

Objectid:	32073	Id:	108261
X coord:	672121	Y coord:	3591266
Db file nb:	CP 00749		
Use:	72-12-1 DOMESTIC ONE HOUSEHOLD		
Diversion:	3	Pod rec nb:	108261
Well numbe:	CP 00749	Tws:	21S
Rng:	37E	Sec:	28
Q:	3	Q2:	4
Q3:	2	Zone:	Not Reported
X:	Not Reported	Y:	Not Reported
Easting:	672169	Northing:	3591064
Start date:	19900615	Finish dat:	19900622
Depth well:	123	Depth wate:	75